

CLAIMS

What is claimed is:

1. A method for controlling data traffic over a network, comprising:

(a) transmitting a message from a first node to at least a second node

5 of the network;

(b) calculating an elapsed time of the transmission of the message of

step (a);

(c) determining whether the second node has replied to the message

transmitted in step (a) from the first node; and

10 (d) transmitting a subsequent message from the first node upon receipt
of the reply from the second node or upon exceeding an elapsed time threshold.

2. The method of claim 1, wherein step (a) further comprises:

(a1) constructing the message to be transmitted; and

15 (a2) maintaining transmission information relating to the message.

3. The method of claim 1, wherein step (c) further comprises (c1) receiving a
reply message from the at least one second node.

20 4. The method of claim 2, wherein step (a2) further comprises storing the
following transmission data: message size, transmission sending time and address of the
at least one second node.

5. The method of claim 4, further including (e) detecting whether a message has been transmitted to the at least one second node; and (f) transmitting a subsequent message to the at least one second node upon detecting the address of the at least one second node in step (e).

5 6. The method of claim 1, wherein the elapsed time calculation step (b) comprises calculating:

$$L*N/R$$

where L is the size of the transmitted message; N is the virtual number of nodes and R is the minimum transmission rate of the network.

10 7. A method for controlling the rate of transmitting data over a network from a node of the network, comprising;

(a) storing information relating to the transmission of data to a node on the network;

15 (b) determining a time interval since the initiation of the data transmission of step (a);

(c) transmitting additional data onto the network upon receiving a reply relating to a prior data transmission or upon exceeding a threshold time interval.

20 8. The method of claim 7, further comprising (d) transmitting subsequent amounts of data to a particular node on the network upon locating an address of the particular node stored in step (a).

9. A communication system, comprising:

a first node coupled to at least one second node by a transmission medium,
the first node including a device for storing data;

the first node including means for determining the elapsed time between
data transmission, wherein data is transmitted from the first node upon receipt of a reply
from the at least one second node or upon exceeding an elapsed time threshold.

10. The system of claim 9, wherein the storage device stores the identifier of
the nodes that the first node has transmitted data to, the first node transmitting additional
data to the at least one second node before receipt of a reply upon determining that a
transmission is outstanding at the at least one second node.

11. The system of claim 9, wherein the storage device stores the size of the
data transmitted to the at least one second node and the elapsed time threshold value is a
function of the data size.

12. The system of claim 9, further including means for deferring transmission
of messages by the first node onto the network, the deferred message(s) being transmitted
upon exceeding an elapsed time threshold value.

13. The system of claim 9, further including means for deferring transmission
of message(s) by the first node onto the network, the deferred message(s) being
subsequently transmitted upon the first node receiving a reply from the at least one
second node.

14. The system of claim 9, wherein the first node comprises a processor and the storage device is an outstanding request queue, the outstanding request queue being at least partially maintained in the processor.

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15. The system of claim 12, wherein the deferred message(s) are maintained in a deferred message queue, the deferred message queue being at least partially maintained in the first node.

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16. The system of claim 15, wherein the first node and the least one second node include a processor.